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## Medicinal Utility of Weeds: A Case Study of Gardens in Parbhani District (M.S.) India

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### Abstract

Unneeded and undesirable plants known as weeds have a negative impact on human welfare because they obstruct the use of land and water resources. Another name for them is "plants out of place." In addition to being a major issue in non-cropped areas like industrial sites, roads, rail lines, airfields, landscape plantings, gardens, water tanks, and waterways, weeds compete with desirable and beneficial vegetation in croplands, forests, aquatic systems, etc. Present study deals with the medicinal utility of weeds of gardens in Parbhani district. In order to understand the present status of weed plants of the area, a survey has been carried out about two years. In the present survey, about 62 weed plants belong to 55 genera and 31 families were collected and identified. Different parts of these weed plants can be fairly used as medicines. The data, indicates that leaves of 51 plant and roots of 23 plants can be utilized for controlling various disorders and diseases. Remedy wise data indicates that 23 plants can be used as anti-inflammatory and antiseptic whereas 20 can control respiratory diseases and 18 can be used in preparation of ailments of skin diseases.

**Keywords:** weeds, diseases, medicinal plants, disorders, Garden and Parbhani District.

### Introduction

Weeds are seasonal or annual plants which germinates during rainy season in agricultural crops, open lands, road sides, gardens etc. abundantly. Botanical garden is a place where varieties of plants are grown for study purpose, maintenance and multiplication. In botanical gardens, number of weed plants germinate and grow. These unusable plants are uprooted regularly. It is well known that every plant has its importance in ecosystem as well as human welfare. Botanical gardens are maintained by scientific persons. Therefore, the present study was carried out to understand medicinal utility of weed plants found gardens in Parbhani district during rainy and winter season of 2022-24. These weeds are uprooted for protection of cultivated plants. There are about 30000 weed plants are occurred throughout the world. The open land weeds are used for grazing where as weeds from agricultural fields are used for fodder to the some extent and remaining thrown away. In general, the complete use of these weeds for human welfare is not possible. However, botanical gardens, university and institutional fields are the places where technical persons are employed. Almost all plants have their own importance and value and at such places identification, separation and proper utilization of weed Plants could be possible. Therefore, there can be some possibilities to run pilot project for utilization of weeds from botanical gardens which will be the value added work for technical persons.

Man managed ecosystem like Botanic Gardens, Parks, agricultural fields, etc. make it possible for weeds to invade. The majority of weeds can survive in any kind of environments. Weeds in different areas of the Botanic Garden have distinct features. Once a particular weed species is introduced, the level of competition greatly influences how abundant or scarce it is in a given area of the garden. A weed's capacity to compete is determined by its vegetative habit, seed germination potential, seedling growth, and lifespan. Reduction in the yield of crops due to weeds has been well demonstrated by several workers (Pandey and Vyas, 1982; Sen et al., 1984; Sen, 1990a,b, and Sahu, 1981).

As weeds are unusable plants, however, traditionally these weeds are used in controlling several diseases and disorders. It can be possible to identify and proper use these weeds as medicine and making their byproducts. The common weed species occurred in botanical gardens has potential of value addition. In the present survey study, attempts were made to identify how many species obtained in a year and to study medicinal properties of different parts of these plants.

### Methodology:

Frequent visits to the study area were made in accordance with a carefully planned schedule.

Collection of plants was conducted following the guidelines suggested by Santapau (1955), more frequent collection of plants was made during rainy and post rainy seasons. The standard procedure was followed to preserve the specimens gathered during field trips. The herbarium of dried and pressed plants was prepared according to customary method (Rao, 1977). The collected plants were identified in the laboratory with the help of Flora of Marathwada (Naik, 1998; Yadav and Sardesai, 2002; Almeida, 1993; Singh and Karthikeyan, 2002; Cooke, 1967). The malies working in the garden gathered information on the medicinal value of various weed parts against various disorders. It has been noted that the Botanic Garden's malies' traditional knowledge of weeds and their applications is very beneficial and must to be thoroughly investigated rather than being set out as weeds.

#### Observations:

Medicinal utility of Botanic garden weeds are described below.

1. *Abutilon indicum* (L.) Sweet (Family-Malvaceae) Commonly known as Pethari. The roots are used as a cooling agent and to treat leprosy and cough. Leaf juice is used to treat ulcers, headaches, bronchitis, and boils. A plant axis is used to treat cough, diarrhea, and bone fractures. Cattle's bodies are treated with leaf juice to eradicate parasites and lice.
2. *Acalypha indica* L. (Family-Euphorbiaceae) Commonly known as Khokli. The entire plant helps with pneumonia, asthma, and bronchitis. Leaf juice is used to treat pneumonia. Acalyphin alkaloids found in plant latex are used to treat scabies and snake bites. Leaf is used to treat skin conditions and ear pain.
3. *Achyranthes aspera* L. (Family-Amaranthaceae) commonly known as Aghada. For ease of delivery, the root is given. In order to stop bleeding after an abortion, it is also given with cold water. In scorpion stings, root paste is applied externally. The entire plant is used to treat dental pain. For coughing, plant ash is taken orally along with a tiny bit of sugar. During a fast, cooked seeds are eaten as rice. Root is used for the treatment of dysentery, asthma, and bronchitis. Leaf paste supports in piles and skin diseases.
4. *Ageratum conyzoides* L. (Family-Asteraceae) Commonly known as Wasadi. The flowers are used in a cancer treatment. The leaves are used to treat uterine disorders and leprosy. Additionally, it is used to treat piles and eradicate hair lice. Leaf paste is applied to burns, boils, wounds, and cuts. Seeds are afflicted with diarrhea. Leaf also helps with scabies and skin conditions.
5. *Alternanthera sessilis* (L.) R. Br. ex. DC. (Family-Amaranthaceae) Commonly known as Chibbukata. Plant axis is used to treat a number of diseases, including diarrhea, malaria, and dysentery. Leaf paste is used to treat fractured bones. Leaves are edible.
6. *Alysicarpus monilifer* (L.) DC. (Family-Fabaceae) Commonly known as Shevra. The entire plant can be employed as a snake bite remedy. White ants and bed bugs are eliminated by mixing crushed plants with cow dung. Apply a warmed paste made from the entire plant to boils.
7. *Alysicarpus tetragonolobus* Edgew. (Family-Fabaceae) Commonly known as Shevra. Root is given for median anti-fertility. The entire plant helps in joint pain and bone fractures. Root can be useful in expectorants as well.
8. *Argemone mexicana* L. (Family-Papaveraceae) Commonly known as Bilait. the leaf paste used to treat leprosy and ulcers. Seeds are used to treat headaches, asthma, and cough. In Piles root paste is given. The entire plant—without the roots—was ground into a fine paste and applied to the body and lips in white patches. Latex is used to treat body aches, pains, and swelling.
9. *Basella alba* L. (Basellaceae) Commonly known as Mayalu. Plant axis is used to treat nose ulcers and syphilis. In cases of constipation, leaves are used. A blend of leaves and shoots used as a vegetable.
10. *Biophytum sensitivum* (L.) DC. (Family-Oxalidaceae) Commonly known as Lajalu. Leaf is used for headaches and cuts. It has antiseptic and antifertility properties as well. The plant axis is used to treat diarrhea and malaria. Menstrual disorders can be effectively treated by mixing leaf paste with cow's milk. Leaf is also used to treat rheumatic and muscular pain.
11. *Blepharis maderaspatensis* (L.) Roth. (Family-Acanthaceae) commonly known as Hadsan. Leaves mixed with some garlic and ground into a paste.
12. *Boerhaavia diffusa* L. (Family-Nyctaginaceae) commonly known as Punarnawa. For headaches, the entire plant is utilized. Leaf helps to purify the blood. Root is used to treat fever, cough, and asthma. Root is used to treat stomach complication, inflammation, and dysentery. For abortion, root paste made with cow's milk is administered. The leaves of tenders are consumed like vegetable for jaundice.
13. *Caesulia axillaris* Roxb. (Family-Asteraceae) commonly known as Pangawat. Leaves are used given goiter. The whole plant is used as vegetable and used to treat stomach complaints. In baldness, the plant axis is used.
14. *Cassia uniflora* L. (Family-Fabaceae) Commonly known as Tarota. Leaf, plant axis, the entire plant used alone or in combination with other plants to treat fever, vomiting, and in wound recovery.
15. *Cassia tora* Linn. (Family-Fabaceae) Commonly known as Tarota. Leaf paste is used for cuts, boils, and antiseptic treatment, and leaves can help with night blindness. Seed is used as a tonic for stomachaches. When a child has a fever or abnormal growth, root is given. Leaves are used to treat stomach pain, intestinal disorders, and bone fractures.
16. *Chenopodium murale* L. (Family-Chenopodiaceae) commonly known as Chandanbatwa. Leaves are used in veterinary, asthma. Leaf and stem used as vegetable.
17. *Cleome gynandra* L. (Family-Capparidaceae) Commonly known as Pandhari Tilwan. Leaf paste is used to treat boils and ear pain. Seeds can help in headaches, skin issues, and coughs. In cases of pyorrhea, leaves can be used as a vermicide. Plant axis paste is given in wounds.

18. *Cleome viscosa* L. (Family-Cappridaceae) commonly known as Pivalitilwan. For ear pain, leaf paste is used. Seed is used to treat skin problems and diarrhea. For urinemia disease, take half a spoonful of leaf powder and sugar (equal amounts) with one cup of milk every morning and evening.
19. *Cocculus hirsutus* (L.) Diels. (Family-Menispermaceae) commonly known as Wasanwel. The leaf decoction is given in fever, eczema, urine disorder.
20. *Commelina bengalensis* L. (Family-Commelinaceae) commonly known as Kena. Leaf paste is applied to wounds and scorpion bites. Diarrhea and Caterpillar bristles cause irritation both treated by leaf.
21. *Commelina diffusa* Burm.f. (Family-Commelinaceae) Commonly known as Kena. Roots are used as an antidote for bilious affect and snake bites. In cases of fever, root extracts are given.
22. *Convolvulus arvensis* L. (Family-Convolvulaceae) Commonly known as Chandnipat. Seeds are purgative. The whole plant used in detergent.
23. *Cuscuta reflexa* Roxb. (Family-Cuscutaceae) Commonly known as Amarwel. The whole plant is used to treat skin conditions, fever, and body pain. The whole plant's paste is used to treat burns, cuts, leg swelling, wounds, and lice infestations. Seeds are used as purgative.
24. *Cymbopogon martini* (Roxb.) Wats. (Family-Poaceae) Commonly known as Gawtichaha. Oil is used to treat bilious effects and skin conditions. In rheumatism, leaves are given.
25. *Cynodon dactylon* (L.) Pers. (Family-Poaceae) commonly known as Harali. The whole Plants are used to treat stomach ulcers. Applying leaf paste on piles stops the bleeding. leaves are also given in vomiting.
26. *Cyperus rotundus* L. (Family-Cyperaceae) commonly known as Lawhala. Root helps in dysentery and diarrhea. Diarrhea, vomiting, and indigestion are treated with root powder and salt.
27. *Datura innoxia* Mill. (Family-Solanaceae) Commonly known as Dhotra. On boils, leaves paste is used. Extracts from seeds are utilized for pyorrhea. Also, leaves are utilized to treat asthma. The entire plant has anti-hydrophobic properties.
28. *Datura metal* L. (Family-Solanaceae) Commonly known as Kala Dhotra. To cure skin conditions, a mixture made from seeds and turmeric powder is applied topically. Leaf used to cure snake bites and coughs. A leaf, seed, and root mixture used to treat skin conditions. The plant axis given in smallpox, mumps, and in madness.
29. *Desmodium triflorum* (L.) DC. (Family-Fabaceae) Commonly known as Salwan. The entire plant helps in physical pain. Leaf is used to treat tooth ache, diarrhea, and dysentery.
30. *Diplocyclos palmatus* (L.) Jeffrey (Family-Cucurbitaceae) Commonly known as Shivlingi.. Seeds used in sex determination of children. Also useful in menses. The plant axis is useful in snakebite.
31. *Eclipta alba* (L.) Hassk. (Family-Asteraceae) Commonly known as Maka. Root paste is applied externally for treatment of antidote to snake bite. The whole plant is useful in anti-fertility, asthma, bronchitis and jaundice. Plant powder boiled in water and used as a treatment of malaria. The whole plant is also useful to remove filarial disease. The whole plant burnt, and made into powder which is mixed with coconut oil and applied on eyelids, for conjunctivis.
32. *Enicostema axillare* (Lam.) Raynal (Family-Gentianaceae) Commonly known as Nai. Fresh leaves of whole plant produced fall in fasting blood sugar in diabetic patients. The whole plant is also useful in treatment of malaria and snake bite.
33. *Euphorbia hirta* Linn. (Family-Euphorbiaceae) Commonly known as Doodhi. The whole plant is used to treat cough, dysentery, and blisters of the mouth. It is also used to treat sickness and toothaches. Leaf is used as an antidote for snake bites and as a remedy for joint ache. Latex is helpful in scorpion bites and scabies.
34. *Evolvulus alsinoides* L. (Family-Convolvulaceae) Commonly known as Sankhpushpi. The The leaf is used to treat ulcers, bronchitis, and asthma. The whole plant is used to treat scorpion stings and stomach pain. Applying mustard oil and plant ash externally for skin conditions. Leaf is helpful in treating bronchitis and asthma.
35. *Fumaria indica* (Haussk.)Pugley. (Family-Fumariaceae) commonly known as PitPapda. The whole plant is an excellent purifier and is used to cure a variety of skin conditions, fever, and body aches. A leaf and stem mixture is used to cure diarrhea.
36. *Heteropogon contortus* (L.) P. Beauv. (Family-Poaceae) commonly known as Kusaligawat. Roots are chewed by the victim of snakebite and also pounded. Leaves used in snakebite.
37. *Hygrophila skullii* (Buch.-Ham.) M.R. & S.M. Almeida (Family-Acanthaceae) commonly known as Talimkhana. Leaf paste is used to treat jaundice and body pain. The plant axis is used to treat cancer and induces urine flow. Whole plant extracts are used to treat malaria. As a tonic, seeds are used.
38. *Hyptis suaveolens* {L.) Poit. (Family-Lamiaceae) Commonly known as Rantulas. Conjunctivitis is treated by dropping leaf juice into the eye. The median antidote to poison is root. Axis of plants are used as tooth brushes to treat headaches and toothaches.
39. *Indigofera cordifolia* Heyne ex Roth. (Family-Fabaceae) Commonly known as Godhadi. Leaf is useful in swelling in mouth.
40. *Indigofera linifolia* (L.f.) Retz. (Family-Fabaceae) Commonly known as Dudhali. Wounds and sores are treated using a paste made from the whole plant. Seeds are edible.
41. *Lagascea mollis* Cav. (Family-Asteraceae) Commonly known as Kalbondi. Leaf paste is applied to wounds and injuries. For ear troubles, flowers are offered.
42. *Launaea procumbens* (Roxb.) Ramayya & Rajgopal (Family-Asteraceae) commonly known as Pathri. Leaf is used in median fever and also used as vegetable.
43. *Oxalis corniculata* L. (Family-Oxalidaceae) commonly known as Amboti. Leaf is used to treat fever, diarrhea, cough, and digestion. Additionally, leaves can help with skin conditions and bug bites. Plant extract used for

gastrointestinal issues. The whole plant is used to treat wounds, infections, and skin eruptions when combined with black pepper.

44. *Parthenium hysterophorus* L. (Family-Asteraceae) commonly known as Gajar Gawat. In the winter, flowers can help clear the nasal block. Leaves are combined with two or three pieces of garlic to make a thin paste, which is then applied to the ear to control the flow of pus.
45. *Phyllanthus amarus* Schumacher & Thonum (Family-Euphorbiaceae) commonly known as Bhui Awli. The whole plant is used to treat jaundice and diarrhea. The whole plant paste used for ulcers, boils, wounds, and swelling. Root extracts are used to treat indigestion and stomach disorders.
46. *Phyllanthus virgatus* Forst f. (Family-Euphorbiaceae) Commonly known as Bhui Awli. The whole plant, when pasted in heaps, is beneficial for colds and fevers. Leaves are used topically to soothe skin inflammation. In gonorrheal disease, a mixture of leaves, flowers, and fruits is given.
47. *Physalis angulata* L. (Family-Solanaceae) commonly known as Popti. It is a tonic made from fruits. A leaf and stem mixture is used to treat gastrointestinal disorders and discomfort. Ear ache is treated using the whole plant. Leaves are used in fever.
48. *Polygala arvensis* Willd. (Family-Polygalaceae) commonly known as Dudhali Asthma, cough, and neurological disorders can all be treated with root. In cases of bronchitis, the entire plant is given. Swollen joints are treated with leaf paste.
49. *Portulaca oleracea* L. (Family-Portulacaceae) commonly known as Warn. The whole plant has significant blood-purifying properties. Whole plant paste can also be used to treat burns, fever, headaches, and burning feelings. Leaves help in headaches and fevers.
50. *Psoralea coryfolia* L. (Family-Fabaceae) commonly known as Bawchi. Seeds are very useful in leprosy, skin diseases and veterinary injuries and Leucoderma treatment.
51. *Ricinus communis* L. (Family-Euphorbiaceae) commonly known as Erandi. Oil-coated hot leaves are rubbed to swollen legs. In albino rats, a root extract exhibited significant hypoglycemic activity.
52. *Rungia pectinata* (L.) Nees. (Family-Acanthaceae) commonly known as Pichku. A mixture of milk and leaf paste can be used to cure smallpox.
53. *Sida acuta* Burm. f. (Family-Malvaceae) commonly known as Bala. flower paste is given in boils and burns. Root paste helps in back discomfort and snake bites. In cases of stomach discomfort and disorders, leaves are given.
54. *Sida cordifolia* L. (Family-Malvaceae) commonly known as Atibala. The whole plant is used to treat gonorrhea and diarrhea. Root paste is applied to wounds and boils.
55. *Sida rhombifolia* L. (Family-Malvaceae) commonly known as Bala. Cuts and boils are treated with root paste. Leaves are excellent for cuts, edema, and diarrhea. Root extracts are used as a tonic and to cure fevers. Gum insecticides are made from seeds.
56. *Solanum nigrum* L. (Family-Solanaceae) commonly known as Kamoni. Leaves are used to treat stomach ache, skin conditions, and diarrhea. The entire plant helps in jaundice and urine problems.
57. *Sonchus arvensis* L. (Family-Asteraceae) commonly known as Sonsali. Leaf paste is applied to wounds and cuts. The entire plant and its stem are eaten as vegetables.
58. *Tephrosia purpurea* Pers. (Family-Fabaceae) commonly known as Unhali Goat and sheep wounds are treated with leaf paste. The plant axis is used in blood-purifying tumors and as an antidote to snake bites. Root extracts are used to treat toothaches, fevers, and stomachaches.
59. *Tribulus terrestris* L. (Family-Zygophyllaceae) commonly known as Gokhru. Fruits can help in liver issues, diuretic disorders, coughing, and asthma. Leucorrhea and urinary problems are also treated with fruits.
60. *Tricodesma indicum* (L.) Br. (Family-Boraginaceae) Commonly known as Krushnakanta. On boils, the entire plant's paste is applied. leaves are edible and help in eczema. The whole plant is used as a brain tonic. For stomach ache, root extract is used. Paste of fruit is applied to reduce swelling.
61. *Tridax procumbens* L. (Family-Asteraceae) commonly known as Dagdi. Leaf paste is applied to wounds, cuts, and boils. Additionally, leaf helps in leprosy, dysentery, and diarrhea.
62. *Vernonia cinerea* (L.) Less. (Family-Asteraceae) commonly known as Sahadevi. The whole plant is beneficial for cuts, piles, and fever. Plant axis helps in diarrhea and cholera.

## Result and discussion:

Medicinally, total 62 weeds belonging to 55 genera and 31 families were found to be important. Many parts of all weeds have been analyzed for their therapeutic benefit. Leaves were considered to be most important part of the weed. From total 62 weeds, 51 plants leaves are found to be useful in various disorders. This is followed by root where 20 plants are found medicinally important. The study revealed that whole plant parts of 29 weeds are found to be important against so many disorders. 15 plants seeds are utilized to cure various diseases. 16 species axis, 10 species flowers, 08 species fruits, and 3 species latex are used in various diseases. The analysis carried out by disease wise, it revealed that for wounds, boils, cuts and burn, maximum weed plants are used. Some of them are used for skin disorders and asthma.

This study aims to advance our understanding of the therapeutic use of weeds. Our traditional expertise is being shared with the public, and it may be feasible to gather various pieces of uprooted weeds and create their by product.

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### Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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